

PREDEVELOPED CONDITIONS

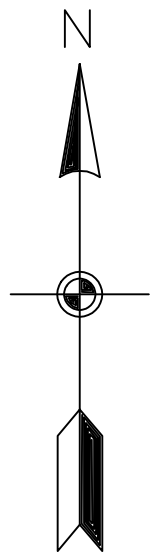
THE SITE HAS ONE NATURAL DRAINAGE DIVIDE THAT SPLITS THE PROPERTY IN TWO SHEDS. THE NORTH EAST DIVIDE (AREA A) OF 4.05 ACRES DRAINS ACROSS NATURAL LAND COVERAGE INTO A DITCH THAT RUNS ALONG EXISTING HIRST ROAD. THIS SHED ALSO RECEIVES A FLOW OF 8.73 CFS (10YR) FROM THE APPROVED AND BUILT STORMWATER MANAGEMENT POND IN THE VILLAGES OF PURCELLVILLE PHASE 6 SECTION 2, PREPARED BY HUNTLEY NYCE & ASSOCIATES. THE DITCH ALONG HIRST ROAD CONVEYS THIS RUNOFF UNDER EXISTING MAPLE STREET THROUGH AN EXISTING 24" CULVERT AND THEN OUTFALLS INTO A CONCRETE LINED DITCH.

THE SOUTH WEST DIVIDE (AREA C) OF 3.89 ACRES FLOWS FROM THE VILLAGES OF PURCELLVILLE DEVELOPMENT, ACROSS THE WO&D TRAIL. THE RUNOFF FOLLOWS A WESTERN DIRECTION TO A DITCH ON THE EAST SIDE MAPLE STREET. THE DRAINAGE IS CARRIED IN THE DITCH ALONG SIDE THE ROAD IN A NORTHERN DIRECTION. THE FLOW IS THEN CONVEYED UNDER MAPLE ROAD VIA AN EXISTING 18" CULVERT. THE RUNOFF CONTINUES ALONG THE WEST SIDE OF MAPLE ROAD.

THE RUNOFF FROM BOTH SHEDS IS COMBINED AT THE SOUTH WEST CORNER OF THE HIRST STREET AND MAPLE STREET INTERSECTION. THE COMBINED FLOWS OF 21.11CFS (10YR) ARE CARRIED 110' TO AN EXISTING 36" CULVERT UNDER EXISTING HIRST STREET. THEN RUNOFF IS THEN COMBINED WITH OFFSITE DRAINAGE AREA OF 6.13AC (9.14 CFS, 10YR) AT THE "STUDY POINT". THIS COMBINED FLOW OF 29.85 CFS (10YR) IS CARRIED UNDER RTE 7 THROUGH A BOX CULVERT THAT OUTFALLS INTO A LOUDOUN COUNTY MAPPED MAJOR DRAIN THAT LEADS TO THE CATOCTIN FLOODPLAIN.

LEGEND

A B TIME OF CONCENTRATION PATH



POST DEVELOPED CONDITION

THE SITE IS BROKEN UP INTO THREE ONSITE DRAINAGE DIVIDES IN POST DEVELOPED CONDITION. DRAINAGE AREA "A" IS THE LARGEST SHED AND CONTAINS THE MOST IMPERVIOUS AREA. DRAINAGE AREA "A" RECEIVES OFFSITE DRAINAGE FROM THE VILLAGES OF PURCELLVILLE PHASE 6 SECTION 2 PREPARED BY HUNTLEY NYCE & ASSOCIATES. THE COMBINED POST DEVELOPMENT FLOW OF 22.53 CFS (10YR) FROM DRAINAGE AREA "A" AND THE PURCELLVILLE VILLAGES POND ENTERS THE PROPOSED STORMWATER MANAGEMENT POND. THE DRAINAGE IS PASSED THROUGH A CONTROL STRUCTURE WHICH REDUCES THE FLOW TO A 10YR PEAK OF 10.13 CFS. THE DRAINAGE IS CARRIED UNDER THE DRIVEWAY THROUGH CLOSED CONDUIT PIPE AND OUTFALLS NEAR THE SOUTH EAST CORNER OF THE HIRST AND MAPLE INTERSECTION.

DRAINAGE AREA "B" BYPASSES THE STORMWATER MANAGEMENT POND AND FLOWS OVERLAND TO THE CULVERT UNDER MAPLE STREET AT THE SOUTH EAST CORNER OF THE HIRST AND MAPLE INTERSECTION. THIS FLOW COMBINES WITH THE FLOW FROM THE POND OUTFALL, RESULTING IN A 14.23 CFS (10YR) FLOW WHICH CROSSES UNDER MAPLE THROUGH AN EXISTING 24" CULVERT AND OUTFALLS INTO A CONCRETE LINED DITCH.

DRAINAGE AREA "C" GENERATES A FLOW OF 5.94 CFS (10YR) THAT BYPASSES THE STORMWATER MANAGEMENT POND. DRAINAGE FROM AREA "C" IS CARRIED UNDER THE MAPLE STREET DRIVEWAY BY A PROPOSED CULVERT PIPE (STR12-STR11) THEN OUTFALLS INTO A NATURAL ROADSIDE DITCH. THE DRAINAGE THEN CROSSES UNDER MAPLE STREET THROUGH A EXISTING 18" CULVERT AND OUTFALLS INTO CONCRETE LINED DITCH. THE DRAINAGE OF AREA "C" IS COMBINED WITH AREA "B" AND POND OUTFALL AT CONCRETE DITCH. THE COMBINED FLOW OF 20.17 CFS (10YR) DRAINS TO THE WEST FOR 110' TO A EXISTING 36" CULVERT. THEN RUNOFF IS THEN COMBINED WITH AN OFFSITE DRAINAGE AREA OF 6.13AC (9.14 CFS) AT THE "STUDY POINT". THE COMBINED FLOW OF 20.93 CFS (10YR) IS CARRIED UNDER RTE 7 THROUGH A BOX CULVERT AND OUTFALLS INTO A LOUDOUN COUNTY MAPPED MAJOR DRAIN THAT LEADS TO THE CATOCTIN FLOODPLAIN. THE POST FLOW RATE IS FOUND TO BE 10.02 CFS LESS THAN THE PREDEVELOPED FLOW. THE FLOW IS SAFELY PASSED THROUGH THE SITE AT LOWER FLOWS AND ENTERS THE FLOOD PLAIN. ADEQUATE OUTFALL HAS BEEN OBSERVED. SEE SHEETS C-122 & C-123 FOR CALCULATIONS.

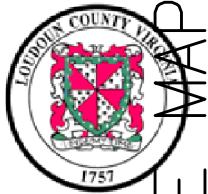


HUGHES GROUP ARCHITECTS
45640 WILLOW POND PLAZA
STERLING, VIRGINIA 20164
703.437.6600

CIVIL:
ALPHA CORPORATION
21351 Ridgeway Circle, Suite 200
Dulles, Va 20166
(703) 450-0800

STRUCTURAL:
EHLERT-BRYAN
1451 Doley Madison Blvd. Suite 220
Haleton, VA 22101
(703) 827-9552

MECHANICAL/ELECTRICAL:
BRINJAC ENGINEERING
4000 Albemarle Street, NW
Washington, DC 20016
(202) 237-2730

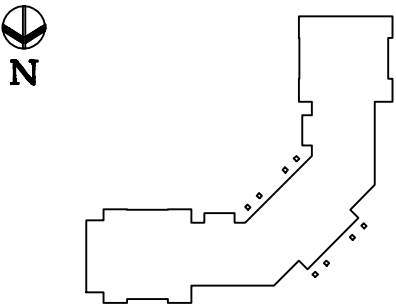


PURCELLVILLE FIRE AND RESCUE

500 NORTH MAPLE AVENUE
PURCELLVILLE, VIRGINIA

ADEQUATE OUTFALL NARRATIVES & DRAINAGE MAPS

KEY PLAN



REVISIONS:

ISSUES:
09-26-07 BID SET

STAMP AND SEAL:

DATE: 09-26-07 SCALE: AS NOTED

PROJECT NO. 0611

SHEET: C-120